

IMIA Operator Algebra Seminar
University of Wollongong

Title: Annihilators in C^* -Algebras

Speaker: Tristan Bice (Universidade Federal de Santa Catarina)

Time and Date: 3:30pm Thursday, 12 December 2013

Location: Room 39C.meeting room

Abstract: I outline my recent research regarding a quite basic C^* -algebraic structure which has, up till now, received little attention from the operator algebra community. Specifically, I look at C^* -algebra annihilators, the hereditary C^* -subalgebras coming from left/right annihilator ideals. It turns out that these are, in many ways, the best C^* -algebra analogs of projections in von Neumann algebras and, indeed, every annihilator in a von Neumann algebra A is of the form pAp for some p in A . Unlike projections, however, annihilators still exist in abundance and form a complete lattice in an arbitrary C^* -algebra. They also admit a simple notion of equivalence which is completely consistent with the classical notion of Murray-von Neumann equivalence. Moreover, we can use annihilators to decompose an arbitrary C^* -algebra in a way that is again completely consistent with the classical von Neumann algebra type decomposition.